Listing of the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (withdrawn): A stable alcohol-in-fluorocarbon microemulsion composition comprising:
an alcohol dispersed phase,
a fluorocarbon continuous phase,
a molecule of interest dissolved or dispersed in alcohol,
a film-forming substance dissolved or dispersed in the alcohol,
a surfactant or co-surfactant or a mixture thereof, and
a cell-targeting ligand.

2. (withdrawn): The microemulsion according to claim 1, wherein the molecule of interest is a drug molecule, a food, a magnet, or a sensor molecule.

3. (withdrawn): The microemulsion according to claim 1, wherein said fluorocarbon is perflubron.

4. (withdrawn): The microemulsion according to claim 1, wherein said film-forming substance is ethyl cellulose.

5. (withdrawn): The microemulsion according to claim 1, wherein said surfactant is a fluorosurfactant.

6. (withdrawn): The microemulsion according to claim 1, wherein said alcohol is ethanol.

7. (withdrawn): The microemulsion according to claim 2, wherein said drug molecule is plasmid DNA, oligonucleotide, peptide, protein, antibody, small drug molecule, or a rare-earth molecule.

8. (withdrawn): The microemulsion according to claim 2, where said sensor molecule responds in a controlled and predictable manner to changes in temperature, pH, pressure, or the presence of another substance.

9. (withdrawn): The microemulsion according to claim 1, wherein said cell-targeting ligand is asialofetuin, mannan, mannose, folate, a saccharide, or an antibody.

10. (withdrawn): The microemulsion according to claim 1, wherein said alcohol is removed from the microemulsion by evaporation or by dilution with a suitable solvent to cause the film-forming substance to precipitate into solid nanoparticles having a diameter less than about 300 nanometers.

11. (withdrawn): A method for purifying or characterizing a solid nanoparticle comprising removing alcohol from the microemulsion according to claim 1 by evaporating or diluting with a suitable solvent thereby curing the nanoparticle in a continuous phase, and subjecting the cured nanoparticle to gel permeation or ultracentrifugation, and obtaining a solid nanoparticle.

12. (withdrawn): A stable liquid hydrocarbon-in-fluorocarbon microemulsion prepared at a temperature of between about 35-100°C and having a composition comprising:

a liquid hydrocarbon dispersed phase,

a fluorocarbon continuous phase,

a molecule of interest dissolved or dispersed in the liquid hydrocarbon,

a surfactant or co-surfactant or a mixture thereof, and

a cell-targeting ligand.

13. (withdrawn): The microemulsion according to claim 12, wherein said fluorocarbon is perflubron.

14. (withdrawn): The microemulsion according to claim 12, wherein said liquid hydrocarbon is a solid at about 25°C, has a melting point of between about 35-100°C, is water-insoluble, and is amphipathic having both hydrophobic and hydrophilic moieties.

15. (withdrawn): The microemulsion according to claim 12, wherein said surfactant is a fluorosurfactant.

16. (withdrawn): The microemulsion according to claim 12, wherein said molecule of interest is a drug molecule.

17. (withdrawn): The microemulsion according to claim 12, where said molecule of interest is a sensor molecule that responds in a controlled and predictable manner to changes in temperature, pH, pressure, or the presence of another substance.

18. (withdrawn): The microemulsion according to claim 12, wherein said cell-targeting ligand is asialofetuin, mannan, mannose, folate, a saccharide, or an antibody.

19. (withdrawn): The microemulsion according to claim 12, wherein the microemulsion is cooled to cause the hydrocarbon to solidify into solid nanoparticles having a diameter less than about 300 nanometers.

20. (withdrawn): A method for purifying or characterizing a solid nanoparticle, comprising cooling the microemulsion according to claim 12, wherein said hydrocarbon is solidified into solid nanoparticles containing said molecule of interest thereby curing said nanoparticle in a continuous phase, and subjecting the cured nanoparticle to gel permeation or ultracentrifugation, and obtaining a solid nanoparticle.

21. (previously presented) A method of making a solid nanoparticle, comprising:

making an oil-in-water microemulsion by heating, the microemulsion comprising:

a liquid nanoparticle matrix material formed by heating a solid matrix material until melted;

a surfactant or a co-surfactant or a mixture thereof, and

a molecule of interest; and

cooling the microemulsion to form the solid nanoparticle, where the molecule of interest is either entrapped in or adsorbed to the nanoparticle.

22. (previously presented) The method according to claim 21, wherein the microemulsion is made by heating at a temperature of between about 35°C and about 100°C and is cooled to room temperature while stirring to form a solid nanoparticle having a diameter of less than about 300 nanometers.

23. (previously presented) The method according to claim 22, wherein the nanoparticle matrix material comprises one or more of the following materials: emulsifying wax, polyoxyethylene sorbitan fatty acid esters, polyoxyethylene alkyl ethers, polyoxyethylene stearates, phospholipids, fatty acids or fatty alcohols or their derivatives, or combinations thereof.

24. (previously presented) The method according to claim 21, wherein the liquid nanoparticle matrix material is present in the microemulsion at a concentration from about 0.1 to about 30 mg/mL.

25. (previously presented) The method according to claim 22, wherein the microemulsion comprises an oil phase that is present as liquid droplets having a diameter of less than about 100 nanometers.

26. (previously presented) The method according to claim 22, wherein the microemulsion comprises a continuous phase comprising water or an aqueous buffer at a concentration of greater than about 95% w/w.

27. (previously presented) The method according to claim 21, wherein the surfactant or co-surfactant comprises polyoxyethylene alkyl ethers, polyoxyethylene sorbitan fatty acid esters, polyoxyethylene stearates, hexadecyltrimethylammonium bromide, fatty alcohol and their derivatives, or combinations, thereof.

28. (previously presented) The method according to claim 21, wherein the surfactant is present at a total concentration of about 1-5000 mM.

29. (previously presented) The method according to claim 21, wherein the molecule of interest is present at a total concentration in the range of about 20 μg/mL to about 5 mg/mL.

30. (previously presented) The method according to claim 21, wherein the molecule of interest comprises a drug molecule, a food, a magnet, or a sensor molecule.

31. (withdrawn) The method according to claim 21, wherein the molecule of interest comprises plasmid DNA.

32. (withdrawn) The method according to claim 21, wherein the molecule of interest comprises Gadolinium, its derivatives or complexes thereof.

33. (withdrawn) The method according to claim 21, wherein the nanoparticle is coated with a cell-specific ligand such as an antibody, carbohydrate, peptide, protein, or derivatives or combinations thereof.